



OFFICE MEMORANDUM

DATE: May 27, 2003

TO: Region Engineers
Region Delivery Engineers
TSC Managers
Resident/Project Engineers
Region Construction Engineers

FROM: Larry E. Tibbits
Chief Operations Officer

John C. Friend
Engineer of Delivery

SUBJECT: Bureau of Highway Instructional Memorandum 2003-08
Changes to Frequently Used Special Provisions and Supplemental Specification for
Errata to the 2003 Standard Specifications for Construction

The *2003 Standard Specifications for Construction* is now available from the Engineering Print Unit. The publications coordinator for each office has received ordering information. Starting with the October 2003 lettings, all English unit plans must refer to the final 2003 book rather than the interim version.

The release of MDOT's *Interim 2003 Standard Specifications for Construction* resulted in the development of several special provisions intended for use with only the interim standard specifications. The special provisions listed here will sunset with the release of the final *2003 Standard Specifications for Construction*. A copy of each of these documents is attached for information. These documents are, or will be, available through the MDOT web site.

03SP605(A) Concrete Quality Assurance Program, approved by C&T on 05-17-02 and by FHWA on 07-08-02, will be replaced by 03SP605(B) Concrete Quality Assurance Pay Factor, approved by C&T on 08-24-01 and by FHWA on 04-02-03.

03SP712(A) Structure Repair with Latex Modified Concrete, approved by C&T on 07-30-02 and by FHWA on 08-20-02, has been incorporated into the final *2003 Standard Specifications for Construction* and will sunset with the release of the book.

03SP812(D) Type III Barricades with Double Sided Sheeting, approved by C&T on 09-30-02 and by FHWA on 10-16-02, has been incorporated into the final *2003 Standard Specifications for Construction* and will sunset with the release of the book.

03SP812(F) Type III Barricade, approved by C&T on 09-30-02 and by FHWA on 10-16-02, has been incorporated into the final *2003 Standard Specifications for Construction* and will sunset with the release of the book.

Special Provision for Lines, Grades and Elevations, approved by C&T on 02-20-02 and revised by C&T on 04-30-02, has been incorporated into the final *2003 Standard Specifications for Construction* and will sunset with the release of the book.

In addition, all items identified in 03SS001(1b) Errata to the *Interim 2003 Standard Specifications for Construction*, dated 06-26-02 have been incorporated into the final *2003 Standard Specifications for Construction* and that supplemental specification will sunset with the release of the book. In its place, 03SS001(2) Errata to the *2003 Standard Specifications for Construction*, dated 04-01-03 has been issued and a copy is attached.

Questions regarding these changes should be directed to Judy Ruszkowski, Engineer of Specifications at 517-322-5669 or Dave Pawelec, Specs and Estimates Engineer at 517-335-1903. Questions may also be sent via email to these individuals at ruszkowskij@michigan.gov or pawelecd@michigan.gov.

Chief Operations Officer

Engineer of Delivery

BOHD:C/T:JR:kab

Subject Index: Special Provisions

Attachments

cc: C & T Support Area Staff
Design, M. VanPortfleet
Traffic & Safety, J. Culp
T. Anderson
C. Rademacher
G. Moore
T. Fudaly, FHWA
MAPA
MCA
AUC
MRPA

Real Estate, M. DeLong
Maintenance, C. Roberts
C & T, B. O'Brien
OEO - S. El Ahmad
V. Blaxton
K. Reincke
MRBA
MCPA
MAA
CRAM
ACEC

BOH IM 2003-08

-3-

May 27, 2003

MPA

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONCRETE QUALITY ASSURANCE PROGRAM

C&T:JAR

1 of 2

C&T:APPR:JFS:JTL:05-17-02
FHWA:APPR:07-08-02

a. Description. All concrete furnished and placed on this project will be accepted and paid for under the Department's Concrete Quality Assurance Program. The following information is added to subsection 605 of the standard specifications.

In subsection 605.01, delete the phrase "including latex modified concrete" from the exemption of bridge deck overlay concrete mixtures.

In subsection 605.01, delete the phrase "Grade X concrete" and replace with "Grade X and Grade M concrete".

Delete subsection 605.01.A.3 in its entirety and replace with the following.

3. **Non-Critical Concrete QA Item.** Concrete pay items that are not eligible for positive pay adjustments, but are subject to negative pay adjustment, if applicable, based on 28-day compressive strength. Non-critical concrete QA items include, but are not limited to, curb and gutter, slope paving, sidewalks and Grade T concrete.

Add the following to subsection 605.03.D.

2. Calculate the pay factor for each lot, in decimal form, as follows:

$$PF = (0.20(PWL) - 18) \div 100$$

where :

PF = Pay factor used in determining the pay adjustment (decimal form).

PWL = Percent within limits determined by the procedure in Section 106

3. Apply the pay factor to each contract item in the lot to determine the pay adjustment for each item as follows:

$$ADJ = PF (\text{quantity}) (\text{price})$$

where:

ADJ = Lot pay adjustment for the contract item

quantity = Quantity of item placed in the lot

price = Contract unit price bid for the contract item

4. If a lot is comprised of more than one critical concrete QA item or is comprised of critical and non-critical concrete QA items, calculate the pay adjustment for each item in the lot separately as follows:
 - a. Critical concrete QA items - Use the pay factor, the contract unit price for the item and the quantity of the item included in the lot.

- b. Non-critical concrete QA items - Use either the pay factor or zero, whichever is less, the contract unit price for the item and the quantity of the non-critical concrete QA item included in the lot.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
CONCRETE QUALITY ASSURANCE PAY FACTOR

C&T:JAR

1 of 1

C&T:APPR:JFS:JTL 08-24-01
FHWA: APPR 04-02-03

a. Description. All concrete furnished and placed on this project will be accepted and paid for under the Department's Concrete Quality Assurance Program. The following information is added to subsection 605.03.D of the standard specifications

2. Calculate the pay factor for each lot, in decimal form, as follows:

$$PF = (0.20(PWL) - 18) \div 100$$

where :

PF = Pay factor used in determining the pay adjustment (decimal form).

PWL = Percent within limits determined by the procedure in Section 106

3. Apply the pay factor to each contract item in the lot to determine the pay adjustment for each item as follows:

$$ADJ = PF (\text{quantity}) (\text{price})$$

where:

ADJ = Lot pay adjustment for the contract item

quantity = Quantity of item placed in the lot

price = Contract unit price bid for the contract item

4. If a lot is comprised of more than one critical concrete QA item or is comprised of critical and non-critical concrete QA items, calculate the pay adjustment for each item in the lot separately as follows:
- a. Critical concrete QA items - Use the pay factor, the contract unit price for the item and the quantity of the item included in the lot.
 - b. Non-critical concrete QA items - Use either the pay factor or zero, whichever is less, the contract unit price for the item and the quantity of the non-critical concrete QA item included in the lot.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
STRUCTURE REPAIR WITH LATEX MODIFIED CONCRETE

C&T:TS

1 of 1

C&T:APPR:JFS:JAR:07-30-02
FHWA:APPR:08-20-02

Delete the fifth, sixth and seventh paragraphs in subsection 712.03.O of the Interim 2003 Standard Specifications for Construction and replace with the following.

Immediately after placement and final finishing of each patch, apply a layer of wet burlap to the exposed concrete surface. This burlap will be soaked in water for a minimum of 12 hours prior to its use. Place a layer of 4-mil minimum polyethylene film securely over the burlap to protect the top surfaces from evaporation. The use of membrane curing compounds will be permitted for patches not using latex modified concrete. Forms left in place, with burlap covering exposed areas, is an acceptable method of curing.

Keep patches not using latex modified concrete covered until the concrete attains a flexural strength of 550 psi, but not less than five days for regular strength patching mixtures nor less than 24 hours for high-early-strength patching mixtures.

Keep patches using regular strength latex modified concrete continuously damp for the first 48 hours. At the end of the 48-hour wet cure period, the curing material will be removed, and the concrete will be allowed to air cure for an additional 48 hour period. Keep patches using high early strength latex modified concrete continuously damp for a minimum of 24 hours.

If temperature falls below 50 °F, the Engineer may require additional curing time to ensure that the concrete attains a flexural strength of 550 psi. If concrete repair is done in cold weather, the cold weather protection requirements of subsection 706.03 shall apply.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TYPE III BARRICADES WITH DOUBLE SIDED SHEETING

T&S:TEM

1 of 2

C&T:APPR:JAR:JKG:09-30-02

FHWA:APPR:10-16-02

a. Description. This special provision revises sections 812 and 922 of the Interim 2003 Standard Specifications for Construction. All work is to be done in accordance with the standard specifications and the following.

Add the following to the second paragraph of subsection 812.03.F.7.

Diagonal stripes on the retroreflective sheeting must slope downward in the direction traffic is to pass. Place sheeting on both sides of the Type III barricades when traffic passes from both directions.

Add the following to the list of Contract Items (Pay Items) in subsection 812.04.

Barricade, Type III, High Intensity, Double-Sided, Furn Each
Barricade, Type III, High Intensity, Double-Sided, Oper Each
Barricade, Type III, High Intensity, Double-Sided, Lighted, Furn Each
Barricade, Type III, High Intensity, Double-Sided, Lighted, Oper Each

Delete subsection 812.04.A.4 in its entirety and replace with the following.

4. Thirty-three percent of the Furnished unit price bid will be paid for all replacement of **Barricade, Type III, High Intensity** or **Barricade, Type III, High Intensity, Double Sided** panels required by the Engineer.

Delete the first paragraph of subsection 812.04.B and replace with the following.

This work will not be paid for separately but is included in the unit price bid for **Plastic Drum, High Intensity, Oper; Plastic Drum, High Intensity, Lighted, Oper; Barricade, Type III, High Intensity, Double Sided Oper; Barricade, Type III, High Intensity, Oper; Barricade, Type III, High Intensity, Lighted, Oper; Barricade, Type III, High Intensity, Double Sided, Lighted, Oper; Sign, Type ____ Temp, Oper; and Sign, Type ____ Temp, Prismatic, Oper.**

Delete the first sentence of subsection 812.04.C and replace with the following.

If notice is given by the Engineer that maintenance is necessary on more than ten percent of the Type C LED lights in service on plastic drums, Type III, high intensity barricades and Type III, high intensity barricades, double sided and these lights are not maintained according to subsection 812.03.I.6 within 72 hours, a five percent reduction in the bid unit price for **Plastic Drum, High Intensity, Lighted Furn; Plastic Drum, High Intensity, Lighted, Oper; Barricade, Type III, High Intensity, Lighted, Furn; Barricade, Type III, High Intensity, Lighted, Oper; Barricade, Type III, High Intensity, Double Sided, Lighted, Furn and Barricade, Type III, High Intensity, Double Sided, Lighted, Oper** will be applied.

Delete subsection 812.04.K in its entirety and replace with the following.

K. Barricade, Type III, High Intensity, Lighted, Furn and Barricade, Type III, High Intensity, Double Sided, Lighted, Furn includes furnishing and installing the barricade, including supplemental weights and Type C lights.

Delete subsection 922.03.D in its entirety and replace with the following.

D. Type III Barricades. Type III barricades consist of three horizontal reflectorized rails, supports and warning lights. When called for, both sides of the three rails must be reflectorized. Sheet the rails with orange and white diagonal striped ASTM Type III high intensity sheeting. All newly manufactured or purchased Type III Barricades must meet NCHRP 350 crash worthy criteria beginning October 1, 2002. All Type III Barricades must be NCHRP 350 compliant by the October, 2004, MDOT letting.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TYPE III BARRICADE

C&T:JKG

1 of 2

C&T:APPR:CAL:JAR:09-30-02
FHWA:APPR:10-16-02

a. Description. To facilitate a transition period to convert all Type III Barricades to be NCHRP 350 compliant, Type III barricades may be the previous design of 12 foot or the current NCHRP 350 compliant 8 foot standard. Any Type III barricade purchased or manufactured after October 1, 2002, must meet the current NCHRP 350 design. All Type III barricades must be NCHRP 350 compliant by the October, 2004, MDOT letting.

b. Materials. For the NCHRP 350 compliant Type III Barricades, the materials shall be:

Materials shall be as described in the R-125 series for 8 foot Type III barricade.
The perforated square steel tube shall be ASTM A-653 steel, grade 50.
The angle iron shall be high carbon, hot-rolled steel.
Sheeting shall be reflectorized orange and white diagonal striped ASTM Type III high intensity.
When called for, warning lights shall be Type C, weighing 3.3 pounds or less.

The previously manufactured 12 foot Type III barricades shall consist of reflectorized 3 - 1 inch x 12 foot rails, supports, supplemental weights and necessary hardware.

Sheeting shall be reflectorized orange and white diagonal striped ASTM Type I (engineering grade) or Type III (high intensity).

Type III barricades used during hours of darkness shall be lighted with two Type C warning devices securely fastened to the top of the two upright posts..

c. Construction. When called for in the project documents, provide a previously manufactured 12 foot Type III barricade or an 8 foot NCHRP 350 compliant Type III Barricade. Any newly built or manufactured Type III barricade must meet the NCHRP 350 criteria. If any warpage, twisting and sagging of the panels occur, the entire Type III Barricade is to be replaced at the Contractor's expense.

d. Measurement and Payment.

Pay items of **Barricade, Type III, High Intensity, Furnished; Barricade, Type III, High Intensity, Operated; Barricade, Type III, High Intensity, Lighted, Furnished and Barricade, Type III, High Intensity, Lighted, Operated** will be measured and paid, as described in section 812.04 of the Standard Specification for Construction. Pay items of **Barricade, Type III, High Intensity, Double-Sided, Furnished; Barricade, Type III, High Intensity, Double-Sided, Operated; Barricade, Type III, High Intensity, Double-Sided, Lighted, Furnished; and Barricade, Type III, High Intensity, Lighted, Double-Sided, Operated** will be measured and paid, as described in the Special Provision, AType III Barricades with Double Sided Sheeting@.

If the previously manufactured 12 foot Type III Barricade is used the reflectorized sheeting may be ASTM Type I or III. The pay item is the same for either sheeting, as listed above.

C&T:JKG

2 of 2

03SP812(F)
09-30-02

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
LINES, GRADES AND ELEVATIONS

C&T:JTL

1 of 9

REV 04-30-02
C&T APPR:JAR:PAL:02-20-02

Delete subsection 104.08 of the 2003 interim specifications and replace with the following.

104.08 Lines, Grades, and Elevations. The Contractor will be responsible for furnishing, placing, protecting, and maintaining staking necessary for proper prosecution, inspection and final measurements of the work under the contract. The Contractor will be responsible for determination and layout of detail dimensions and elevations. The Engineer may check the Contractor's work at any time to assure conformance per Section 104.01.

- A. **Engineer Staking.** The Engineer will establish the original horizontal and vertical control points, if necessary, prior to construction as follows:
1. On road projects, stakes will be set on construction centerline or an offset line approximately every 1,000 feet on tangent and at all points of curvature, tangent deflections and spiral control. Furnished benchmarks as shown on the plans and temporary benchmarks as necessary to establish points at approximately every 1,000 feet along the project will be looped and accurately set by the Engineer.
 2. On bridge projects, a staked layout or a base line will be provided so the structure can be staked radially. The method used will be discussed with the Contractor prior to doing the layout. The stakeout will include witnesses and two benchmarks. A stakeout diagram showing witnesses, angles, and coordinates will be provided to the Contractor.
 3. Points of intersection of curves and spirals, may be eliminated when they fall beyond the right of way limits.
 4. The Engineer will provide the Contractor a list of coordinates for the control points and benchmarks when applicable.
 5. Right of way staking shall be the responsibility of the Engineer. If required, for the installation of right of way fence or to delineate right of way, a right of way stake will be set at a maximum of 100-foot intervals along the right of way line and at all corners marking a change in width or direction.
- B. **Contractor Staking.** The Contractor shall supply all stakes, survey equipment, personnel, and other devices necessary for checking, marking, preserving, and maintaining all points, lines, and grades as defined in the MDOT Construction Manual. Stakes will be set and marked in a manner that will permit checking of the construction activities. All work shall be done in such a manner as to allow the proper verification of all related work and pay items. Staking shall not be done in such a manner as to preclude the Engineer from exercising the authority specified under Section 104.01. The Contractor shall notify the Engineer, two working days

prior to moving any benchmark or control point, and shall provide the Engineer a list of points moved, including but not limited to computations and descriptions of the new locations.

The Contractor shall use competent personnel and suitable equipment and materials for layout work required. The Contractor shall submit, for the Engineer's approval, a resume documenting the crew chief's ability, experience, and education. Grade stakes of the following nominal minimum dimensions are to be furnished by the Contractor. Grade stakes are to be 1 inch x 2 inch x 3 feet, light colored hardwood; slope stakes are to be 1 inch x 4 inch x 2 feet, light colored hardwood; pavement stakes are to be 1 inch x 4 inch x 3 feet, light colored hardwood. All stakes are to be planed on both sides.

The Contractor will be responsible for the development of all necessary grades and field notes, from data supplied on the plans. These grades will be provided to the Engineer after they are computed and at least 48 hours prior to the start of the related work or as requested by the Engineer. Printouts of profile grades shown on the plans may be available upon the Contractor's request. Other information related to the development of the grades may also be available. The Contractor must be aware that this information may not be complete or accurate and shall not be used as a basis for any claim relating to plan errors and omissions. In addition, the Contractor shall provide and be responsible for the following:

1. **Control Points** - Witnessing horizontal control points (such as curvature points, tangent deflections, and spiral controls) for reestablishment within 0.02 feet for line and distance. The measured distance between control points shall check with a precision of 1 in 5,000 for road work and 1 in 10,000 for bridge work. At least three witnesses for each control point, each visible from the other, shall be maintained during construction.
2. **Benchmarks** - A level circuit shall be run over the entire project to check plan benchmarks and establish new benchmarks. Benchmarks shall be looped with a minimum of three benchmarks in the loop and shall check within 0.01 feet. When grading, the Contractor shall check into a benchmark, within 0.03 feet, at 1,000-foot intervals. The Engineer shall be advised of any bench elevation correction made due to out of tolerance checks. A minimum of two benchmarks shall be maintained at each structure during construction.
3. **Slope Stakes, Subgrade Stakes, Undercut Stakes, Clearing Stakes** - Stakes shall be provided at 50-foot intervals or as agreed to by the Engineer, and at all break points due to subgrade transitions. This includes, but is not limited to, superelevation transitions and ramp transitions. The Engineer may request subgrade stakes after topsoil stripping for subgrade inspection prior to commencement of subsequent grading operations. Individual tree removal shall be marked and determined by the Engineer.
4. **Pavement Stakes** - After the subbase is placed and rough graded, pavement stakes shall be provided as follows:
 - a. Stakes will be placed at 50-foot intervals on tangent sections and on curves with radii of 1,150 feet or more.
 - b. Stakes will be placed at 25-foot intervals on curves with radii of less than 1,150 feet.
 - c. In addition to yield stakes, the Contractor is also required to set an adequate number of stakes to determine bituminous wedging limits. This may include taking cross sections in questionable areas as determined by the Engineer.

The pavement grade stakes will be used for finish grading of the subbase, base course, and pavement. They will be checked for grade, realigned, and tacked prior to the paving operation. Offsets required for the Contractor's operations shall be determined by the Contractor and approved by the Engineer.

5. **Drainage Stakes** - Grade and location stakes for culverts, sanitary sewers, storm sewers, subsurface drains, drainage structures, sanitary structures, and outlets shall be provided by the Contractor. The Contractor shall be responsible for positive drainage. Adjustments in location and grade for drainage items shall be approved by the Engineer. Prior to installation of underdrains, the Contractor shall submit, to the Engineer for approval, a plan for underdrain outlets which includes distance between outlets, low point of vertical curves and comparison between clay grade, the underdrain grade, the outlet grade and the ditch grade at each outlet location.
6. **Miscellaneous Staking** - Staking for pumphouses, curb and gutter, sidewalk, watermain, retaining walls, siphons, sound walls, barrier walls, junction chambers, guardrail, sign structures, signs, structure under clearance, crossovers, restoration items, erosion control items and all staking not addressed, but required to construct the project in accordance with the contract documents or to determine pay quantities, shall be the responsibility of the Contractor.
7. **Utility Staking** - The Contractor shall provide proposed bridge and roadway location grades and layout of contract work for the utility company's use in relocation of their facilities within the project right-of-way, after the contract has been awarded.
8. **Muck Stakes** - Muck stakes shall be provided as follows or as modified by the Engineer:
 - a. Centerline stakes will be placed in accordance with Subsection 104.08.B.4.a and b.
 - b. Offset stakes at no more than 50-foot intervals shall be placed in order to provide adequate information for the construction and for determination of pay quantities.
 - c. Each stake shall clearly display the stationing, offset distance, and ground elevation.
 - d. When the depths of the replaced muck needs to be determined by the Engineer, the Contractor shall establish a grid as directed by the Engineer to determine the amount of peat excavation. The normal grid is one cross section every 50-foot along the centerline between the 1:1 slope intercept with the original ground as defined in the applicable standard plans for the treatment of peat marshes.
9. **Temporary Signs** - All temporary sign stakes or markings in accordance with the project plans and maintaining traffic provisions in the proposal shall be the responsibility of the Contractor. The Contractor shall notify the Engineer after this work is completed but prior to the temporary sign installation.
10. **Bridge Approaches** - The Contractor shall be responsible for the development of all grades and field notes necessary to construct the bridge approaches from data supplied on the plans.
11. **Bridge Substructure** - Upon completion of excavation for the foundation, the Engineer will verify line and grade of the foundation.

The Contractor shall be responsible for carrying line and grade to the bridge seat elevation, aligning and dimensioning of forms, and staking of substructure work (i.e., footing embankment or excavation, pile layout, footings, abutment wall, anchor bolts, etc.).

Prior to casting of the pier cap or abutment wall, the Engineer will verify the line, grade, and span lengths. Any costs for adjustments due to the Contractor's work methods shall be the Contractor's responsibility.

12. **Bridge Superstructure** - Deck and rail grades, screed, haunch, bulkhead, sidewalk, curb, fascia, barrier grades, and any other grade required to complete the structure shall be set by the Contractor. The Contractor shall determine beam elevations and/or existing deck elevations to compute final deck grades, including those for overlay projects. The final deck grades and their associated calculations shall be provided to the Engineer prior to setting the rail grades. If the Contractor must adjust the screed to obtain proper slab depth, steel cover, ride quality, drainage, or cosmetic appearance, approval must be obtained from the Engineer. All other bridge superstructure grades that require adjustment shall be provided to the Engineer prior to their use. Any staking cost incurred due to these adjustments shall be the responsibility of the Contractor. Other changes initiated by the Department will be paid for as extra work.

Whenever there is new construction or improvements of existing roadway or structure the Contractor shall furnish the Engineer structure clearance measurements as outlined in the Construction Manual.

13. **Bridge Overlays** - On overlay projects, proposed finished deck grades referenced to a proposed deck profile shall be determined by the Contractor and approved by the Engineer prior to setting expansion joint devices. Expansion joint grades shall be set along the center line of the expansion joint device in accordance with the proposed deck cross section to achieve a quality ride across the deck. The proposed profile at all break points across the bridge deck section and at 25-foot intervals maximum shall be based on elevations taken on the existing concrete deck. If the existing deck is overlayed with bituminous, the existing elevations shall be taken after the bituminous overlay has been removed. Unless otherwise shown on the plans, the proposed deck cross slopes shall match the existing deck cross slopes. The Contractor shall correct irregularities in existing profile cross section and slope using sound engineering judgement in order to achieve ride quality and drainage while maintaining proper cross slope. The Contractor shall consider depths of scarifying, depths of hydro-demolishing, and minimum thickness of overlay material in determining proposed bridge deck elevations. Proposed deck elevations shall be determined in a manner which will avoid overlay material quantity overruns. The quantity of overlay material required to construct the deck to the proposed elevations shall be calculated by the Contractor and submitted to the Engineer with the proposed deck elevations prior to construction.
14. **Urban Adjustments** - The Contractor is hereby notified that all field conditions may not have been incorporated into the plans that would allow an accurate fit of the proposed work. Therefore, it is expected that the Contractor shall exercise proper engineering judgement and develop the grades and notes, after performing the necessary checks at the proposed project site. If deviations from the plans occur, the Contractor shall immediately notify the Engineer and propose a potential solution. The Engineer shall determine the actual solution and give direction to the Contractor as soon as possible. The cost to perform the above mentioned work shall be included in the pay item.
15. **Final Measurement.** Final measurement for payment, will be the responsibility of the Contractor and will include detailed measurements, sketches and computations. Measurements will be in accordance with the pay items as specified.

- C. **Construction Survey and Staking Measurements.** Construction survey and staking tolerances shall be as outlined in Table 104-1.

Table 104-1: Construction Survey and Staking Measurements

	Horizontal feet (min)	Vertical feet (min)

Bench loops	1000 ft. between benchmarks	0.01 ft. between benchmarks
ROW Stakes	0.01 (Angles turned to the nearest 5 sec)	
Clearing Stakes	0.10	N/A
Slope, Subgrade, Utility Tunnel, and Misc Stakes	0.10	0.01
Pavement, Drainage and Bridge Stakes	0.01	0.01
Cross Sections	25 feet left and right 50 feet along centerline	0.10 on ground shots 0.01

- D. **Preserving Stakes.** Completed staking shall be preserved as long as required for inspection of construction work by the Engineer. Any inspection or checking of the Contractor's layout by the Engineer and the acceptance of all or any part of it shall not relieve the Contractor of his responsibility to secure the proper dimensions, grades, and elevations of the several parts of the work.

If the stakes or benchmarks are lost or destroyed, they will be replaced by the Contractor and verified by the Engineer. No payment for any related contract pay item will be made until the above lost or destroyed stakes are replaced by the Contractor. No claims for damages during this time period will be allowed.

Stakes set by the Engineer shall be carefully preserved by the Contractor. Any stakes destroyed due to the Contractor's operations will be replaced at the Engineer's earliest convenience and the Contractor will be charged for the labor, equipment and materials required to replace the stakes.

All government monuments within the project limits will be located, preserved, and witnessed unless specified otherwise. Any monuments destroyed due to the Contractor's operations or negligence will be reestablished by a registered land surveyor hired by the Contractor at no cost to the Department. The replacement shall be completed as soon as practicable. If the surveying is not completed, the Engineer will hire a registered land surveyor to complete the work. All costs will be charged to the Contractor. All remonumenting shall be in accordance with Public Act 74 of 1970 as amended and Public Act 345 of 1990 as amended.

- E. **Plan Errors.** A plan error shall be defined as any omission, miscalculation, or inaccurate dimension which occurs on the plans that cannot be corrected to fit the existing conditions or the proposed project with prudent and judicious use of applied engineering knowledge by an experienced staking crew in the normal performance of its duties. The Contractor shall document the efforts made and the steps taken to correct any plan discrepancy when it occurs. This documentation shall be submitted to the Engineer when requested.

If a plan error is discovered, then all of the following shall occur. The Contractor shall immediately notify the Engineer of any plan error. The Engineer will determine the solution (MDOT or Contractor - proposed) to the plan error as soon as possible. The Engineer will then decide as soon as possible whether the Contractor or the Department will provide the staking for the corrective action.

If the plan error results in extra work to the contract, the Engineer shall issue a work order directing the corrective action. The time paid to the Contractor for staking shall begin when the crew begins the work detailed on the work order, including time for calculations and plotting if such work is required by the work order. The Contractor is responsible for written notification to the Engineer as to when such work begins and ends.

- F. **Extra Work.** For extra work, the Engineer will provide any necessary grades and/or computations. The Engineer will then determine who is to perform the required staking. If the Contractor is to perform the staking, payment shall be in accordance with Subsection 109.07.
- G. **Changes.** Staking changes approved by the Engineer due to the Contractor's methods will not be paid for separately. The Engineer will have two working days to resolve and approve all staking changes. No claims for damages or extensions of time during this period will be allowed unless it can be shown that the claim adversely affects the critical operation and were outside the approved Contractor Quality Control Plan .

The Contractor shall provide documentation for all staking changes initiated by the Contractor, including those resulting from plan error, for approval of the Engineer prior to staking. This may include, but is not limited to, all notes, computations, and drawings necessary to determine the changes. When staking, the Contractor shall perform the necessary checks to establish the proper location and grade to fit the existing conditions as agreed to with the Engineer. Any errors resulting from the operations of the Contractor shall be corrected at no additional cost to the Department.

- H. **Staking Documentation.** Staking documentation and field notes shall be signed, checked, dated, and provided by the Contractor in a neat and orderly manner as approved by the Engineer prior to the start of the related work. The original field notes and grade computation documents shall become the property of the Department upon completion of the work. The field notes and computation documents may be inspected by the Department at any time.

The Contractor shall provide original and final plotted cross sections and final volume calculations in a format meeting the prior approval of the Engineer for all earthwork, undercuts, muck excavation, swamp backfill, sand subbase, and topsoil stripping and shall determine final quantities for these items by plan sheet breakdown. Intermediate plotted cross sections will be provided by the Contractor to verify interim earthwork quantities when requested by the Department. The Contractor shall also provide to the Engineer a final "as constructed" full sized set of paper plans documenting all changes of vertical and horizontal alignment, all drainage and subsurface changes, and other miscellaneous changes. All plans and cross sections shall be at the same scale provided the Contractor on the plans.

- I. **Contractor Staking Quality Control.** Contractor Staking Quality Control shall be the means by which the Contractor ensures that the construction staking on the project complies with the requirements of the contract. The controls shall be adequate to cover all staking operations including that done by subcontractors and shall be keyed to the construction sequence.

As a minimum, all staking on this project shall be done in accordance with the Construction Surveying Guidelines provided in the MDOT Construction Manual or an alternate guidebook as approved by the Engineer.

At the preconstruction meeting the Contractor shall provide the Engineer with a Contractor Staking Quality Control (CSQC) plan for this project detailing the guidebook used for quality control and all measures incorporated to detect and minimize construction staking errors and problems.

Periodic review of the CSQC plan shall be done by the Engineer and Contractor during the life of the contract. The Engineer shall be allowed access to all construction staking work in progress and all phases of the ongoing CSQC plan for the purpose of assurance review. Assurance reviews will be used for the purpose of making independent checks on the reliability of the Contractor's quality control procedures as outline in the CSQC plan. These checks are not to be construed as a basis for acceptance of any work by the Contractor. The Contractor remains solely responsible for the correction of any inadequate work related to Contractor staking errors.

The CSQC plan shall include, as a minimum, the following information to cover all aspects of staking operations under control of the Contractor.

1. **Plan Manager.** Identify one person as the sole contact to the Department relating to staking quality control. This person shall be responsible for contractor staking quality control on all phases of the project and shall be on site during all staking operations.
2. **Equipment Calibration.** Provide copies of all equipment certification. This shall include, but is not limited to, levels, transits, lasers, total stations and GPS units. Equipment will be checked on a semi-annual basis or at anytime accuracy becomes questionable. Tests are to be made on a certified stand when possible. When field checks are made, the method used and all readings are to be documented and provided to the Engineer.
3. **Procedures and records.** This section of the plan shall contain a listing of the procedures and records to be used to properly control the quality of the staking operations. This portion of the plan shall include as a minimum, the following:
 - a. List of work items to be staked
 - b. Description of the method of computing grades and staking
 - c. Description of the checks made to detect errors while staking
 - d. Method of documetation, example field book
 - e. Procedure to handle detected errors
 - f. Final Measurement method and documentation
4. **Approval of CSQC plan.** Acceptance of the CSQC plan is required prior to the start of staking operations. The Department has five work days to review the plan to determine acceptability. Work is not to start until the plan is accepted by the Engineer in writing. Delays due to the Contractor's inability to submit an acceptable plan shall not be a basis for extensions of time without liquidated damages.
5. **Changing the Plan** If it is determined by the Department, that the Contractor's performance on the project is unsatisfactory, the Department reserves the right to require the Contractor to make changes in the CSQC plan at no additional cost to the Department. The Contractor may be required to suspend all work operations until the plan is changed and approved.

- J. **Method of Measurement and Basis of Payment:** Contractor Staking, as specified, will be paid for on a lump sum basis.

Partial payments for Contractor Staking will be made according to the following schedule:

Percent of Original Contract Amount Earned	Percent of Bid Price Paid
---	----------------------------------

Approved CSQC Plan	10 %
10 %	30 %
50 %	75 %
90 %	90 %

The Department will retain ten percent of the bid amount for Contractor Staking until the Engineer receives all specified documents.

No adjustment in the lump sum amount will be made when final payment for the project is within ± 5 percent of the original bid amount or for approved extensions of time. When final payment differs from the original bid amount by greater than 5 percent, an upward or downward adjustment will be made to the lump sum amount by the percentage which exceeds ± 5 percent.

Staking plan errors or extras shall be paid for on an hourly basis.

Contract Item (Pay Item)	Pay Unit
---------------------------------	-----------------

Contractor Staking	Lump Sum
Staking Plan Errors and Extras, One Person	hour
Staking Plan Errors and Extras, Two Person.....	hour
Staking Plan Errors and Extras, Three Person.....	hour

Maximum Cap on **Staking Plan Errors and Extras:** \$75/hr. for one person; \$100/hr. for two person; \$125/hr. for three person.

If a price higher than the maximum stated is bid for **Staking Plan Errors and Extras, One Person; Staking Plan Errors and Extras, Two Person or Staking Plan Errors and Extras, Three Person**, the bid proposal will be deemed to have quoted the maximum and the bid total will be adjusted to reflect the maximum. If the bid is then the lowest accepted bid, and if the Contractor refuses to accept award of the contract, due to the change in the revised pay item amounts, the Contractor's proposal guaranty will be forfeited.

Item	Page	Subsection	Errata
------	------	------------	--------

03SS001(1b)

MICHIGAN
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
FOR
ERRATA TO THE INTERIM 2003 STANDARD SPECIFICATIONS

Item	Page	Subsection	Errata
------	------	------------	--------

- | | | | |
|-----|--------|----------------------|---|
| 39. | 101-3 | 101.03 | In the definition of Contract Modification, change Aauthorized@ to Aauthorization@. |
| 40. | 101-8 | 101.03 | Delete the last sentence of the definition of Special Provisions. |
| 38. | 102-1 | 102.01 | Delete Aor certified@ from third sentence. |
| 1.* | 104-3 | 104.01.E | Sixth paragraph should read as follows: APlatform Scales - Twenty 1000 pound weights@ |
| 2. | 104-14 | 104.08.J | Change pay unit for Staking Plan Errors and Extras, Two Person to Hour. |
| 3. | 104-17 | 104.11.B | First paragraph, second sentence, table reference should be Table 104-2. |
| 4. | 104-19 | 104.11.D | First paragraph, first sentence, table reference should be Table 104-3 |
| 5. | 106-2 | 106.03.E
106.03.F | Add the following immediately after the first sentence of both 106.03.E and 106.03.F: ARound to the nearest 0.05 according to ASTM E 29 Section 6.6.A |
| 6. | 106-2 | 106.03.K | Delete subsection 106.03.K in its entirety. |
| 7. | 106-3 | 106.03.L | Re-index 106.03.L as 106.03.K. |

An asterisk (*) indicates an entry which has been revised from an earlier version of this supplemental.

Item	Page	Subsection	Errata
8.	109-8	109.06.A.2. b	Delete the first sentence and replace with the following: AWhen requested by the Contractor and approved by the Department, the retainage may be reduced upon acceptance of the project. The amount of reduction will be determined by the Department.@
9.	109-12	109.07.E.1. a	Change Dataquest to Equipment Watch.
54.	109-14	109.07.G	Change Aother@ to Aothers@ in the first sentence.
71.	150-2	Table 150-1	Change AContact@ to AContract@.
93.	202-1	202.04	Add the following Contract Items (Pay Items). Tree, Rem, 37-inch or Larger.....Each Stump, Rem, 37-inch or LargerEach
10.*	203-2	203.04	Delete the following Contract Items (Pay Items). Culv, Rem, ____ inch.....Each Culv End, Rem, ____ inch.....Each Sewer, Rem, ____ inch.....Foot Add the following Contract Items (Pay Items). Culv, Rem, Less than 24 inch.....Each Culv, Rem, 24 inch to 48 inch.....Each Culv, Rem, Over 48 inchEach Culv End, Rem, Less than 24 inch.....Each Culv End, Rem, 24 inch to 48 inch.....Each Culv End, Rem, Over 48 inch.....Each Sewer, Rem, Less than 24 inch.....Foot Sewer, Rem, 24 inch to 48 inch.....Foot Sewer, Rem, Over 48 inchFoot
11.	303-2	303.04	Contract Items (Pay Items) should read as follows. Open-Graded Dr Cse, ____ inch Open-Graded Dr Cse, CIP
12.	303-2	303.04	Change Course to Cse in five places.

An asterisk (*) indicates an entry which has been revised from an earlier version of this supplemental.

Item	Page	Subsection	Errata
13.	304-3	304.03.D	Last paragraph, first sentence should read as follows: A...shall be within a tolerance of \pm one inch when measured with a ten foot straightedge (any two contacts with the surface) before placing...@
14.	307-2	307.04.A.2	Should read as follows: A...loading and hauling, will be paid for by volume in cubic yards, loose measure, measured at the final point of delivery, as...@
15.	307-2	307.04.A.3	Should read as follows: A Trenched aggregate reused...@
16.*	401-1	401.01.A	First paragraph, first sentence, delete A...and precast concrete box...@
51.	401-2	401.02	Change AASHTO M 198 to ASTM C 990.
52.	401-2	401.03	Change ASTM C 1433M to ASTM C 1433 in three places.
17.	401-3	401.03.C	First paragraph, second sentence, should read as follows. A Pipe culvert bedding...@
64.	401-4	401.03.E	Change A 2-foot@ to A 36 inch@ in the last sentence of the last paragraph of this subsection.
18.*	401-7	401.03.O	Delete the second sentence and replace with the following: A Video inspection is not required for driveway culverts; culvert extensions less than 50 feet; new culverts less than 50 feet; extension of catch basin leads less than 20 feet or culverts greater than 36 inches in diameter.@
19.	401-7	401.04	Contract Item (Pay Item) should read as follows: Culv, Reinf Conc Ellip, CI ____, (rise) inch by (span) inch
20.	401-7	401.04	Change A...End Sec,...@ to A...End Sect,...@ in 12 Contract Items (Pay Items).
21.*	401-9	401.04.D	Change A End Sec @ to A End Sect @ in seven places.
22.	403-5	403.04	Contract Items (Pay Items) should read as follows: Dr Structure, ____ inch dia

Item	Page	Subsection	Errata
			Dr Structure, Add Depth of, ____ inch dia, 8 feet to 15 feet
			Dr Structure Add Depth of, ____ inch dia, more than 15 feet
23.	403-5	403.04.A	Change foot dia to 1 inch dia in two places.
24.	403-5	403.04.B	Move the second paragraph of this subsection to the end of 403.04 as new subsection 403.04. G.
72.	403-6	Table 403-1	Change the weight for structure cover G to read 220 pounds.
25.	507-7	507.03.E	Second paragraph, third sentence, change Aoverlapping to Aoverlap .
56.	507-8	507.04	Delete the last sentence and replace with the following: A Corrective action, including the cost of providing traffic control to complete corrective action, will not be paid for separately but is included in the contract unit price for microsurfacing items of work. @
46.	601-14	Table 601-2	Delete the second sentence of footnote (b) and replace with the following: Class 6AAA coarse aggregate will be used exclusively for all mainline and ramp concrete pavement when the directional commercial ADT is greater than or equal to 5000 vehicles per day.
58.	602-17	602.03.S.4	Delete the second and third sentence in the fourth paragraph of this subsection.
26.	602-18	602.04	Change AConc Pavt, Overlay,... to AConc Pavt, Ovly,... in four Contract Items (Pay Items).
27.	602-19	602.04.C	Change AOverlay to AOvly in three places.
76.	603-5	603.03.B1.a	Reference should read 603.03.B.1.b.
94.	603-13	603.04	Pay Unit for the following Contract Item (Pay Item) should read as follows: Saw Cut, IntermediateFoot
57.	603-16	603.04.K	The first sentence should read as follows: APayment for

An asterisk (*) indicates an entry which has been revised from an earlier version of this supplemental.

- resawing and sealing longitudinal and transverse pavement joints includes...@
28. 605-1 605.02 First paragraph, second sentence, section reference should read: A...other than those specified in sections 601 and 701,...@
 29. 605-3 Table 605-1 Change AMinimum Cementitious Material Content@ to ACementitious Material Content@
 61. 605-5 605.03.B.2 Second paragraph, first sentence, change Asubsection (C)@ to Asubsection 605.02@.
 95. 605-10 605.04 Pay Unit for the following Contract Item (Pay Item) should read as follows:
Conc Quality Initiative..... Dollar
 30. 701-9 701.03.I First line of this subsection should read A...**Ground Granulated Blast Furnace Slag**...@
 31. 701-9 701.03.I Second paragraph, reference should read 601.03.A.4.
 60. 706-24 706.03.S.2 Change Aseven days@ to A28 days@.
 59. 706-26 706.04.A Change first sentence to read, A Unless otherwise stated, pay quantities for the pay items listed will be based on...@
 62. 710-6 710.03.D.1 First paragraph, fourth sentence, change A4 square feet in area@ to A2 feet square@.
 63. 712-5 712.03.C Last paragraph, first sentence, change Abeams/girders@ to Abeams@.
 53. 806-2 806.03.E.1 Change A36 inches@ to A6 inches@in the second sentence.
 66. 807-1 807.03.B Change A3 inches@ to A3 feet@in the second sentence of the first paragraph of this subsection.
 37. 807-4 807.04 Delete the following pay item.
Guardrail Post, Furn,____ inch.....Each
 67. 808-4 808.04 Contract Item should read as follows.
Fence, StructureSquare Foot
 68. 808-5 808.04.B.3 Change Aform@ to Afrom@.
 69. 808-5 808.04.C Change **Structure, Fencing** to **Fence, Structure**.

- | | | | |
|-----|--------|-------------|---|
| 65. | 810-3 | 810.03.E | First paragraph, fourth sentence, change A3 feet 8 inches@ to A3 feet 6 inches@. |
| 80. | 810-13 | 810.03.S | Third paragraph, first sentence, change A1 2 inch@ to A3 inch@.
Third paragraph, second sentence change, A6.4 μm@ to A250 micro inches per inch@. |
| 32. | 810-14 | 810.04 | Contract Items (Pay Items) for breakaway supports should read as follows:
Fdn, Breakaway, W8 by <u>(wt/ft)</u>
Column, Breakaway, W8 by <u>(wt/ft)</u> |
| 89. | 811-1 | 811.03.A | Fourth paragraph, second sentence should read: A...it must be no more than three years old, and ...@. |
| 55. | 811-3 | Table 811-1 | Replace Table 811-1 with new Table 811-1 shown below. |
| 81. | 811-5 | 811.03.D.2 | Delete the last sentence of this subsection. |
| 33. | 811-5 | 811.03.D.4 | First paragraph, third sentence should read as follows: AAt the start of marking operations the minimum ambient air temperature shall be 48 °F, the pavement surface temperature shall be at least 50 °F and both temperatures must be rising.@ |
| 90. | 811-5 | 811.03.D.5 | Delete the fourth paragraph of this subsection and replace with the following: APlace approved alternate material if temperatures are not sufficient for the use of adhesive applied cold plastic markings.@ |
| 91. | 811-6 | 811.03.F | The last sentence of this subsection should read: APavement marking (call back) shall be an approved pavement marking material.@ |
| 34. | 811-6 | Table 811-2 | Replace Table 811-2 with new Table 811-2 shown below. |
| 92. | 811-9 | 811.04 | Contract item should read as follows:
Call Back, Pavt Mrkg, <u>(material)</u> , ____ inch, <u>(color)</u>Foot |
| 82. | 811-10 | 811.04.C | Delete the first paragraph of this subsection and replace with the following:
C. Call Back, Pavt Mrkg supersedes the pay item for the specific pavement marking material selected and included in the proposal.@ |

83. 811-11 811.04.F Delete F.4 and F.5 from this subsection.
87. 812-6 812.03.F.9. Add the following at the beginning of this subsection:
a ASelect paint and preformed tape from the Qualified Product List and install according to section 811. Use equipment that meets subsection 811.03.A@.
47. 812-11 812.03.I.8 Fourth paragraph, second sentence, change the title of the video to A*Safely Regulating Traffic in Michigan*@.
96. 812-18 812.04 Delete the following Contract Items (Pay Items).
Pavt Mrkg, Longit, 5 inch or Less Width, Rem.....Foot
Pavt Mrkg, Longit, 5 inch to 10 inch Width, Rem.....Foot
Pavt Mrkg, Longit, Greater than 10 inch Width, Rem.Foot
- Add the following Contract Items (Pay Items).
Pavt Mrkg, Longit, 6 inch or Less Width, Rem.....Foot
Pavt Mrkg, Longit, Greater than 6 inch Width, Rem ...Foot
97. 815-6 815.04 Contract Items (Pay Items) for site preparation and watering and cultivating should read as follows:
Site Preparation, Max. (dollar).....Lump Sum
Watering and Cultivating,
First Season, Min. (dollar)Lump Sum
Watering and Cultivating,
Second Season, Min. (dollar)Lump Sum
35. 816-6 816.03.E Fifth paragraph, last sentence, reference should read 917.15.A.
86. 816-9 816.04.H Add a new subsection at the end of 816.04 to read as follows.
816.04.H Seeding will be measured by weight, in pounds, of seed applied.
70. 819-1 819.01 Delete the second and third sentence of this subsection.
48. 819-9 819.03.F.5. Change section reference to 819.03.F.5.d.
b
49. 819-9 819.03.F.6. Change section reference to 819.03.F.6.d.
b
50. 819-12 819.03.H.4 In the first paragraph, first sentence, change A*lower*@ to A*lowering*@.
- Delete the following Contract Items (Pay Items).

98. 819-12 819.04 Conduit, Directional Bore, ____ , ____ inchFoot
Conduit, Fiberglass,
Schedule ____ , ____ inch, StructureFoot

Add the following Contract Items (Pay Items).

- Conduit, Directional Bore, ____ inchFoot
Conduit, Fiberglass, ____ inch, StructureFoot
Conduit, Fiberglass, ____ inchFoot

100. 820-6 820.04 Delete the following Contract Items (Pay Items).
Digital Loop Detector, ____Each
Digital Loop Detector, and Cabinet, ____Each

Add the following Contract Items (Pay Items).

- Digital Loop DetectorEach
Digital Loop Detector, SalvEach
Digital Loop Detector and CabinetEach
Digital Loop Detector and Cabinet, SalvEach
Power Co. (Est. Cost to Contractor) Dollar

74. 902-7 Table 902-1 For Class 6AA and Class 6A, add 602 under Item of Work
by Section Number.

For Class 34G, delete the specification limit on the No. 4
sieve and add a total percent passing specification limit of
0-5 percent on the No. 8 sieve.

- 44.* 902-8 Table 902-1 In footnote (a) Change 503 to 502 and add 602 Concrete
Pavement Construction.

75. 902-9 Table 902-2 Insert a horizontal line in the rightmost column, immediately
below the Flat and Elongated Particles limit of 3:1 - 15.0, to
show that this limit applies only to Class 4 AA and does not
apply to Class 6 AAA

Add footnote (l), to apply only to the Flat and Elongated
Particles limit on Class 4 AA, to read as follows.

- l. ASTM D 4791 section 8.4 will be followed. The test
will be performed on the material retained down to and
including the one inch sieve.

Add footnote (m), to apply only to the Flat and Elongated
Particles limit on Class 25 A and Class 29 A, to read as
follows.

- m. ASTM D 4791 section 8.4 will be followed. The test

will be performed on the material retained down to and including the No. 4 sieve.

- | | | | |
|------|----------------|--------------------------|--|
| 45. | 902-12 | Table 902-4 | Change Aof@ to Aon@ in footnote (a). |
| 41. | 905-2 | 905.07 | Change Grade 1860 to Grade 270 in the first sentence. |
| 42. | 905-3 | 905.08 | Change Grade 1860 to Grade 270 in the first sentence. |
| 78. | 908-4 | 908.12.C | First sentence should read: A... or hot-rolled steel sheet in ASTM A 1011, Grades 36 or 40.® |
| 101. | 908-5 | 908.15.B.2 | First sentence should read: A...shall conform to ASTM A 563, Grade DH, or ...® |
| 43. | 909-2 | 909.04.B | Replace AASHTO M 270 with AASHTO M 207 in the second paragraph. |
| 77. | 909-2 | 909.04.D | First sentence should read: A...shall meet ASTM C 1433, as applicable.® |
| 36. | 909-11 | Table 909-6 | Footnote (a). should read as follows: Permitted for 12 to 18 inch diameter 2-2/3 x 1/2 inch helically corrugated pipe only. |
| 73. | 909-13
etc. | Tables 909-
9
etc. | In Tables 909-9, 909-10, 909-11, 909-13, 909-14, 909-15, 909-16 and 909-17 replace Class designations 1, 2, 3, 4, 5 and 6 with Class designations A, B, C, D, E and F, respectively. |
| 99. | 910-3 | Table 910-1 | Change the specification limit for Apparent Opening Size for woven and nonwoven geotextile separator from 0.21 mm to 0.425 mm. |
| 84. | 912-1 | 912.01 | Third paragraph, first sentence, should read: A...including bored holes, saw cuts, routs and kerfs, ...® |
| 85. | 912-2 | 912.04.A | First sentence should read: AAll cuts, routs, saw kerfs, holes, and injuries ...® |
| 88. | 922-1 | 922.02.B | First sentence should read: A...shall meet requirements for ASTM D 4956 Type VII prismatic sheeting.® |
| 79. | 922-1 | 922.03.B | Last sentence should read: A...shall conform to Standard Plan R-125 Series.® |

Table 811-1 Pavement Marking Material Application Rates per Mile

	Waterborne		Thermoplastic		Sprayable Thermoplastic		Epoxy		Regular Dry	
Line Type	Binder (gal)	Beads (lbs)	Binder (lbs)	Beads (lbs)	Binder (lbs)	Beads (lbs)	Binder (gal)	Beads (lbs)	Binder (gal)	Beads (lbs)
BROKEN										
4 inch	4	32	455	44	180	125	5.5	137.5	4	24
8 inch	8	64	910	88	360	250	11	275	8	48
SOLID										
4 inch	16	128	1820	176	720	250	22	550	16	96
8 inch	32	256	3640	352	1440	500	44	1100	32	192

Table 811-2 Minimum Material Placement Temperatures

Material	Minimum Air Temperature (a)	Minimum Pavement Temperature (a)
Waterborne	(b)	50° F
Thermoplastic	48° F	50° F
Sprayable Thermoplastic	50° F	50° F
Epoxy	(b)	35° F
Cold Plastic Tape	60° F	70° F
Regular Dry	(b)	25° F
Raised Pavement Markers	(b)	50° F
a. See text for more detailed information. b. If a minimum air temperature is not given the minimum pavement temperature will prevail.		

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION
FOR
ERRATA TO THE 2003 STANDARD SPECIFICATIONS

03SS001(2)

1 of 2

04-01-03

Page	Subsection	Errata
27	103.03.A.1	Reference should read 109.07.B and C.
27	103.03.C	Reference should read 109.07.E.
71	107.10.D.1	Change Ainitialed@ to Ainitiated@.
76	107.15.A.2	Delete the last paragraph of this subsection.
105	109.07	The first sentence of this subsection should read A...prices for extra work, the extra work...@.
122	203.04	<p>Delete the following Contract Items (Pay Items)</p> <p>Culv, Rem, More than 24 inch.....Each</p> <p>Culv, End, Rem, More than 24 inch.....Each</p> <p>Sewer, Rem, More than 24 inch Foot</p> <p>Add the following Contract Items (Pay Items)</p> <p>Culv, Rem, Over 48 inchEach</p> <p>Culv, End, Rem, Over 48 inch.....Each</p> <p>Sewer, Rem, Over 48 inch Foot</p>
142	205.03.P	Change Asoley@ to Asolely@ in the last sentence of this subsection.
162	209.01	Change ARemove@ to ARemove@ in the first sentence of this subsection.
610	812.03.K.6	Change AW8-11 (UNEVEN LANES)@ to AW8-9 (UNEVEN LANES)@ in two places.
623	812.04.T.3	<p>Delete this subsection and replace with the following:</p> <p>A3. Items measured as lump sum if they are used or required on the worksite during the authorized extension of time, except that Minor Traffic Control Devices will not be adjusted when conspicuity tape is the only minor traffic control device in service or required during the authorized extension of time.@</p>
723	906.04.B	Change A40 °F@ to A30 °F@ in the last sentence of this subsection.
869	922.03.C	Delete this subsection and replace with the following.

AC. Drums with Lights. Drums with warning lights attached must meet NCHRP 350 crashworthy criteria. Provide certification, according to subsection 922.01, when requested.®

869	922.03.D	Change Acrash worthy® to Acrashworthy® in the last sentence of this subsection.
871	922.03.E.2	Change A2 inch® to A2 -inch® in the second sentence of the third paragraph of this subsection.
899	General Index	Change the page number reference for Concrete: Barrier, Bridge to 469.
920	General Index	Delete the material page reference, in boldface type, for Sleeves Placed in Structures.
922	General Index	Change AStructure: Rehabilitation: Remove Portions® to AStructure: Rehabilitation, Remove Portions®.